



# LED Display Product Data Sheet LTP-2558AA-NB

Spec No.: DS-30-99-673

Effective Date: 07/15/2000

Revision: -

**LITE-ON DCC**

**RELEASE**

BNS-OD-FC001/A4

**FEATURES**

- \* 2.3 inch (58.42 mm) MATRIX HEIGHT.
- \* LOW POWER REQUIREMENT.
- \* SINGLE PLANE, WIDE VIEWING ANGLE.
- \* SOLID STATE RELIABILITY.
- \* 5x8 ARRAY WITH X-Y SELECT.
- \* COMPATIBLE WITH USASCII AND EBCDIC CODES.
- \* STACKABLE HORIZONTALLY.
- \* CATEGORIZED FOR LUMINOUS INTENSITY.

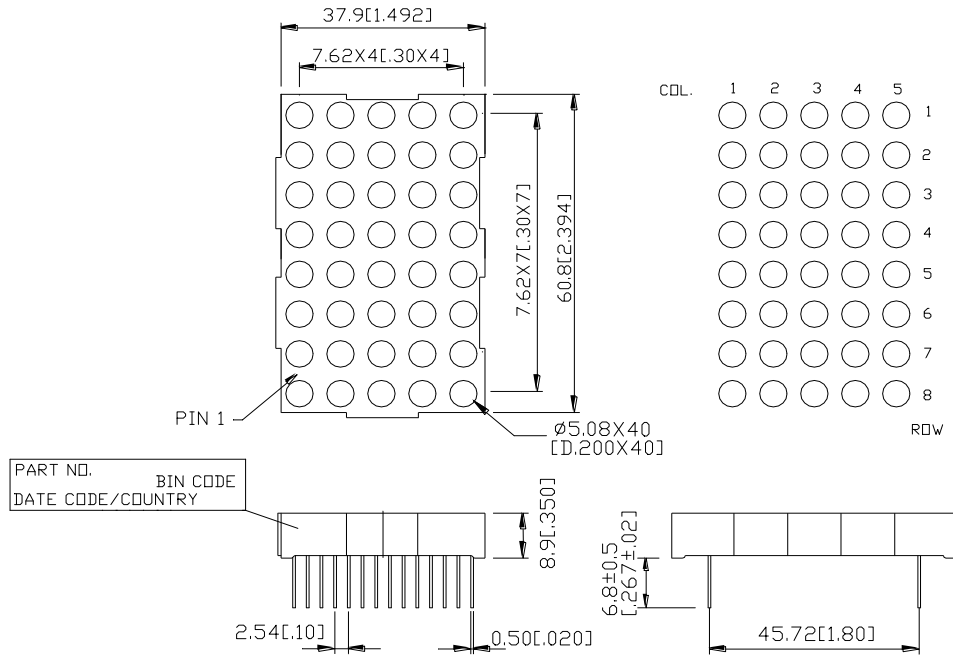
**DESCRIPTION**

The LTP-2558AA-NB is a 2.3 inch ( 58.42 mm) matrix height 5x8 dot matrix displays  
This device utilizes Red Orange and Green LED chips The Red Orange LED chips are made from GaAsP on GaP a transparent substrate, the green LED chips are made from GaP on GaP substrate , and has a black face and white dot color.

**DEVICE**

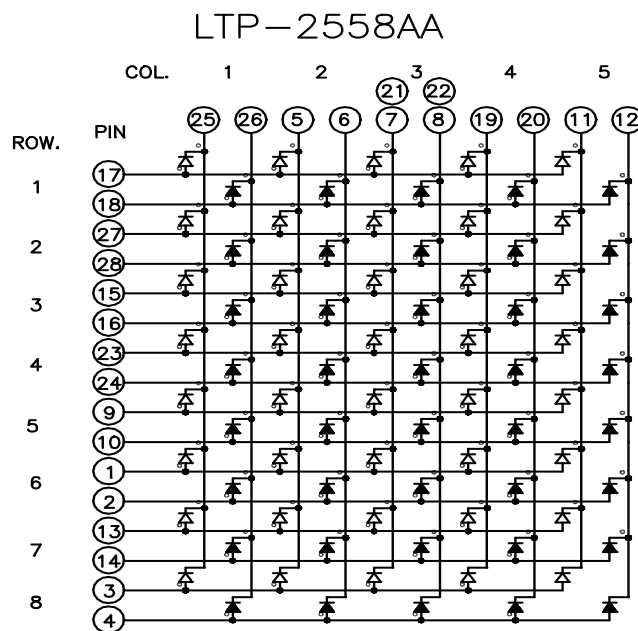
<b>PART NO.</b>	<b>DESCRIPTION</b>
Red Orange and Green	CATHODE COLUMN
LTP-2558AA-NB	ANODE ROW

## PACKAGE DIMENSIONS



NOTES: All dimensions are in millimeters. Tolerance is  $\pm 0.25$  mm (0.01") unless otherwise noted.

## INTERNAL CIRCUIT DIAGRAM



**PIN CONNECTION**

<b>No.</b>	<b>CONNECTION</b>	<b>No.</b>	<b>CONNECTION</b>
1	ANODE Row 6 GREEN	2	ANODE Row 6 RED ORANGE
3	ANODE Row 8 GREEN	4	ANODE Row 8 RED ORANGE
5	CATHODE COLUMN 2 GREEN	6	CATHODE COLUMN 2 RED ORANGE
7	CATHODE COLUMN 3 GREEN	8	CATHODE COLUMN 3 RED ORANGE
9	ANODE Row 5 GREEN	10	ANODE ROW 5 RED ORANGE
11	CATHODE COLUMN 5 GREEN	12	CATHODE COLUMN 5 RED ORANGE
13	ANODE Row 7 GREEN	14	ANODE ROW 7 RED ORANGE
15	ANODE Row 3 GREEN	16	ANODE ROW 3 RED ORANGE
17	ANODE Row 1 GREEN	18	ANODE ROW 1 RED ORANGE
19	CATHODE COLUMN 4 GREEN	20	CATHODE COLUMN 4 RED ORANGE
21	CATHODE COLUMN 3 GREEN	22	CATHODE COLUMN 3 RED ORANGE
23	ANODE Row 4 GREEN	24	ANODE ROW 4 RED ORANGE
25	CATHODE COLUMN 1 GREEN	26	CATHODE COLUMN 1 RED ORANGE
27	ANODE Row 2 GREEN	28	ANODE ROW 2 RED ORANGE

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

PARAMETER	GREEN	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average Forward Current Per Dot	13	mA
Derating Linear From 25°C Per Dot	0.17	mA/°C
Reverse Voltage Per Dot	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.		

**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C****GREEN**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	1780	4800		μcd	I <sub>p</sub> =80mA 1/16Duty
Peak Emission Wavelength	λ <sub>p</sub>		565		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		30		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		569		nm	I <sub>F</sub> =20mA
Forward Voltage any Dot	V <sub>F</sub>		2.1	2.6	V	I <sub>F</sub> =20mA
			3.0	3.7		I <sub>F</sub> =80mA
Reverse Current any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	I <sub>v</sub> -m			2:1		I <sub>F</sub> =10mA

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

**ABSOLUTE MAXIMUM RATING AT Ta=25°C**

PARAMETER	RED ORANGE	UNIT
Average Power Dissipation Per Dot	36	mW
Peak Forward Current Per Dot	100	mA
Average Forward Current Per Dot	13	mA
Derating Linear From 25°C Per Dot	0.17	mA/°C
Reverse Voltage Per Dot	5	V
Operating Temperature Range	-35°C to +85°C	
Storage Temperature Range	-35°C to +85°C	
Solder Temperature: max 260°C for max 3sec at 1.6mm[1/16inch] below seating plane.		

**ELECTRICAL / OPTICAL CHARACTERISTICS AT Ta=25°C**

PARAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	TEST CONDITION
Average Luminous Intensity	I <sub>v</sub>	1780	4800		μcd	I <sub>p</sub> =80mA 1/16Duty
Peak Emission Wavelength	λ <sub>p</sub>		630		nm	I <sub>F</sub> =20mA
Spectral Line Half-Width	Δλ		40		nm	I <sub>F</sub> =20mA
Dominant Wavelength	λ <sub>d</sub>		621		nm	I <sub>F</sub> =20mA
Forward Voltage any Dot	V <sub>F</sub>		2.0	2.6	V	I <sub>F</sub> =20mA
			2.6	3.4		I <sub>F</sub> =80mA
Reverse Current any Dot	I <sub>R</sub>			100	μA	V <sub>R</sub> =5V
Luminous Intensity Matching Ratio	I <sub>v</sub> -m			2:1		I <sub>F</sub> =10mA

Note: Luminous intensity is measured with a light sensor and filter combination that approximates the CIE (Commission Internationale De L'Eclairage) eye-response curve.

**TYPICAL ELECTRICAL / OPTICAL CHARACTERISTIC CURVES**

(25°C Ambient Temperature Unless Otherwise Noted)

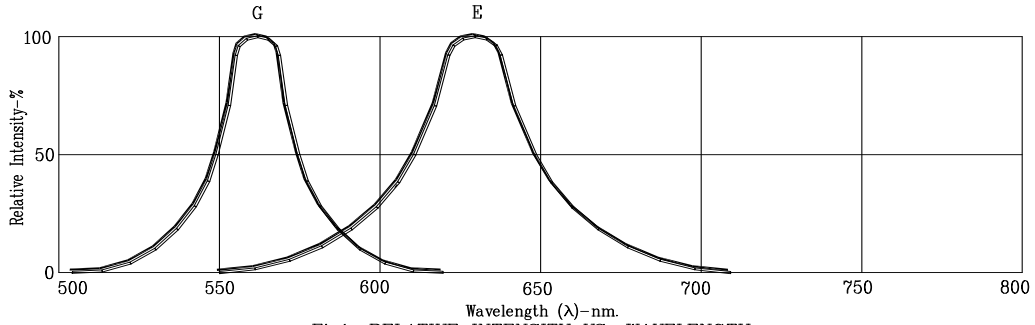


Fig1. RELATIVE INTENSITY VS. WAVELENGTH

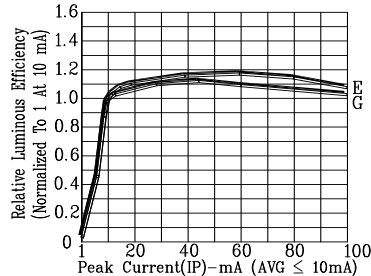


Fig2. RELATIVE LUMINOUS EFFICIENCY (LUMINOUS INTENSITY PER UNIT CURRENT) VS. PEAK CURRENT (REFRESH RATE 1KHz)

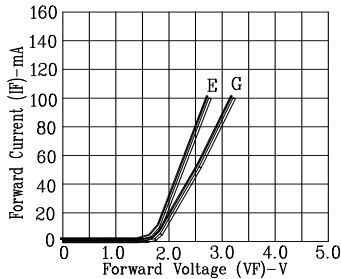


Fig3. FORWARD CURRENT VS. FORWARD VOLTAGE

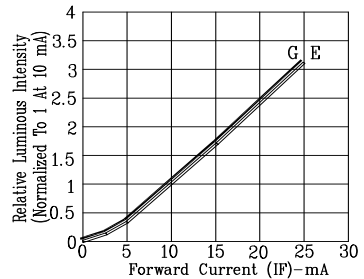


Fig4. RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT

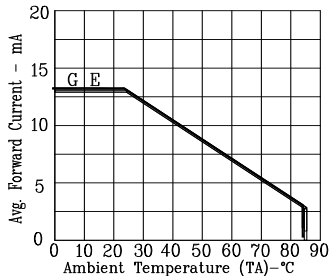


Fig5. MAX. AVERAGE FORWARD CURRENT VS. AMBIENT TEMPERATURE

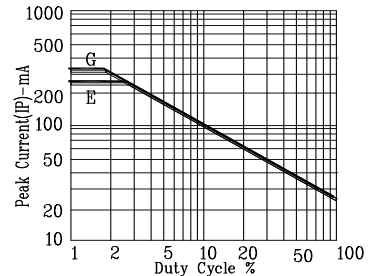


Fig6. MAX. PEAK CURRENT VS. DUTY CYCLE % (REFRESH RATE 1KHz)

NOTE: G=GREEN E=RED ORANGE